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NEW SUBSPECIES OF *PAPILIO* AND *GRAPHIUM* FROM THE SOLOMON ISLANDS, WITH OBSERVATIONS ON *GRAPHIUM CODRUS* (LEPIDOPTERA, PAPILIONIDAE)

by

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With one plate

During inspection of the Papilionid butterflies of the Nieuwenhuis collection in the Rijksmuseum van Natuurlijke Historie, Leiden, I found some new forms which are described below.

Papilio toboroi straatmani ssp. nov. (pl. 1 figs. 1-2)

Diagnosis. — Characterized by the large discal band on fore and hind wings, and by the presence of a yellowish discal band on the underside of the fore wings.

Material examined. — Male (holotype), Solomon Islands, S. Isabel, Holibara, 750 m, 22.viii.1964, Straatman leg.; in coll. Nieuwenhuis (Rijksmuseum van Natuurlijke Historie, Leiden).

Description of holotype. — Male, length of fore wing 56 mm. Head, thorax and abdomen black. Fore wing: ground colour matt black, on the upperside two greenish gray apical spots, the first being the larger. A complete discal band from the subcostal vein to the inner margin, transversally filling the distal part of the cell. On the underside a complete row of yellowish, conjoined spots, forming a band that is yellowish anteriorly, bluish posteriorly. Space 9 interspersed with yellowish scales. The cell has a transverse band from the subcostal vein to vein 5 and continuing to the inner margin. On the upperside of the hind wing a large discal band from the costa to the inner margin, passing at the level of the anastomosis of vein 7, entering into the cell and filling its outer third. The distal margin of the band appears as indented. There is a conspicuous, short, submarginal band situated between S2-S4, continuing to the yellow anal spot. On the underside the ground colour is yellowish with a discal row of cuneiform black spots, not

conjoined, yellowish speckled posteriorly, well separated from the cell anteriorly. A black spot in the cell; a submarginal band of yellow spots of which the one in space 1b is duller, separated from the orange superior patch by a bluish black spot which extends to the discal band. A very narrow black marginal band ends with a thin arrow-shaped patch in S6.

Discussion. — The main differences between *P. toboroi straatmani* and the nominate subspecies lie in the broad discal band of the upperside of fore and hind wings, in the presence of the discal band on the underside of the fore wings, and in the much clearer underside of the hind wings. Among the more than thirty specimens of *P. toboroi* Ribbe examined from various localities in Bougainville I did not find a single specimen with a pattern resembling that of ssp. *straatmani.*

The presence of *P. toboroi* in Santa Isabel has extended the known range of the species much farther southwards, since until now it was only known from Bougainville. Straatman (pers. comm.) saw this species also flying in Malaita.

Graphium mendana aureofasciatum ssp. nov. (pl. 1 fig. 3)

Diagnosis. — A discal yellow band on the upperside of the fore wing and a yellowish gray discal band on the upperside of the hind wing. No submarginal spots on the underside of the hind wing.

Material examined. — Male (holotype), Solomon Islands, NW, Malaita, Dala, ex pupa 1.vii.1964, Straatman leg.; in coll. Nieuwenhuis (Rijksmuseum van Natuurlijke Historie, Leiden). Male (paratype), Solomon Islands, Malaita, Morgan leg.; in coll. Racheli.

Description of the holotype. — Male, length of fore wing 50 mm. Thorax and abdomen black with whitish longitudinal stripes. Abdomen whitish gray below. Fore wing upperside velvety black; a row of discal spots that are small anteriorly and increase in size posteriorly. Six yellow submarginal spots of which the posterior three faintly marked. In the cell two very minute dots. Underside fore wing as upperside, with the three posterior spots of the discal band slightly suffused with brown basally; a costal red spot and a light transverse band across the cell; of the submarginal spots only the three anterior ones are clearly defined. Upperside hind wing with a band from costa into cell, not reaching the apex of the cell and continuing in an oblong spot in S2; two minute dots in S3 and S7. The band and the anal fold are whitish yellow. There is a spatulate tail of about one cm long at vein 4. Underside of hind wing plain brownish black except for a red spot in S1b and S7.

Description of the paratype. — Male, length of fore wing 49 mm. Pattern

as in holotype. The yellow bands, even if somewhat faded, are more intense in colour. This specimen is badly damaged and a description of the hind wings is not possible.

Discussion. — The presence of this yellow form in Malaita, where also *Graphium codrus* (Cramer) occurs, with similar yellow bands, is noteworthy. Why the two species, which are evidently closely allied, show this convergence in colour in the same island is puzzling, since elsewhere in the Solomon Archipelago they are sympatric and green banded and, moreover, *G. codrus* is always green throughout its wide range (from Celebes through Philippines, Moluccas and New Guinea to Solomon Islands), except in the Admirality Islands and in some other populations where occasionally yellowish individuals may turn up.

A NOTE ON *GRAPHIUM CODRUS* (CRAMER)

Godman & Salvin (1888) described *Papilio pisidice* from a single damaged specimen from NW. Bay in Malaita, clearly identifying it: "... fascia ... supra et subtus laete aurea nec viridi ...". When the same authors described *Papilio solon* from Aola, Guadalcanal, they had no doubts, as Grose Smith & Kirby (1888) correctly stated, about its difference from *Papilio pisidice.* Possibly due to lack of specimens Rothschild (1895) thought *P. pisidice* to have been described from a faded specimen, and synonymized it with *P. solon.* Also Jordan (1909) considered *P. solon* a synonym of *P. pisidice.* Recently D'Abrera (1971) recognized *pisidice* as the only subspecific name for all populations of *Papilio codrus* from the Northeastern Solomon Islands, at the same time placing it in the genus *Graphium.*

Straatman (pers. comm.) observed *G. codrus* in Malaita where it is always yellow banded, not unlike *G. codrus auratus* (Rots.) from the Admirality Islands. I personally examined fresh specimens of *G. codrus* from Malaita in Coll. Treadway (Frankfurt), and I was able to confirm that the yellow colour is not due to fading of an originally green colour. On the basis of the present knowledge the following subspecific division of *G. codrus* can be made: ssp. *solon* (Godman & Salvin) occurs in Bougainville, Shortland, Choiseul, Florida and Guadalcanal; ssp. *tenebrionis* (Rothschild & Jordan) occurs in the New Georgia group; ssp. *christobalus* (Jordan) is restricted to San Christobal; and ssp. *pisidice* is restricted to Malaita.

Unfortunately the name *Papilio solon* Godman & Salvin, 1888, is invalid, since it is a junior homonym of *Papilio solon* Fabricius, 1793. I therefore propose the name *gabriellae* in the combination *Graphium codrus gabriellae* nom. nov.

Riassunto

Vengono descritti *Papilio toboroi straatmani* ssp. nov. di S. Isabel, Isole Salomone e *Graphium mendana aureofasciatum* ssp. nov. di Malaita. Alcune considerazioni sono fatte su *Graphium codrus* (Cramer) delle Isole Salomone. *Papilio solon* Godman et Salvin, 1888, è omonimo di *Papilio solon* Fabricius, 1793, e viene quindi proposto il nome *gabriellae* nella combinazione *Graphium codrus gabriellae* nom. nov. A questa sottospecie sono riferite le popolazioni di *Graphium codrus* delle Salomone, tranne quelle del gruppo di New Georgia, S. Cristobal e Malaita ove, rispettivamente, sono state descritte le ssp. *tenebrionis* (Rothschild et Jordan), ssp. *christobalus* (Jordan) e ssp. *pisidice* (Godman et Salvin).

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The new names are dedicated to my friend Mr. R. Straatman and to my wife Gabriella.

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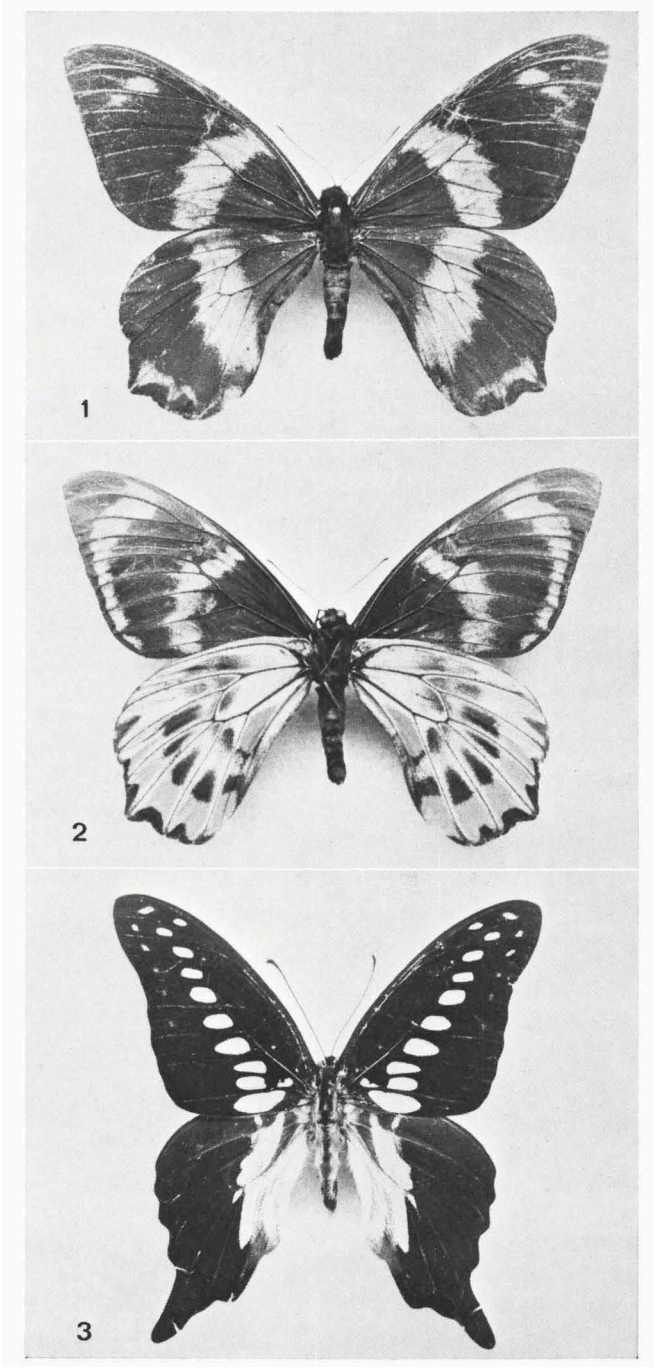

Figs. 1-2. *Papilio toboroi straatmani* ssp. nov., male, holotype. 1, upperside; 2, underside.
Fig. 3. *Graphium mendana aureofasciatum* ssp. nov., male holotype, upperside.